MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
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Division: RRD
Report to: JEFF LIPPERT
MDEQ-RRD-WARREN
SOUTHEAST MICHIGAN DISTRICT OFF
27700 DONALD COURT, WARREN, MI 48092-2793

Total: $514.50

Lab Work Order # : 71100023
Work Site ID : LB040537
Site Name : THORNE APPLE VALLEY
Received: 11/06/2007
Reported: 12/07/2007
Collected By: JEFF LIPPERT

Samples Received :

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AB07230	SS-01	SEDIMENT	11/05/2007

I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Bob Avery, Laboratory Director

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Sample Number: AB07230 SS-01

Volatile Compounds

Analytical Method: 8260 **Date Tested:** 11/13/2007 **Analyst:** KCL
Extraction Method: 5035 **Extraction Date:** 11/08/2007 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	8.14			
SURROGATE	#Bromofluorobenzene#	140			
SURROGATE	#Dibromofluoromethane#	166			
SURROGATE	#Toluene-d8#	150			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	69		50
71-55-6	1,1,1-Trichloroethane	360	69		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	69		50
79-00-5	1,1,2-Trichloroethane	Not Detected	69		50
75-34-3	1,1-Dichloroethane	Not Detected	69		50
75-35-4	1,1-Dichloroethylene	Not Detected	69		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	340		50
96-18-4	1,2,3-Trichloropropane	Not Detected	69		50
526-73-8	1,2,3-Trimethylbenzene	660	69		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	340		50
95-63-6	1,2,4-Trimethylbenzene	340	69		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	340		50
106-93-4	1,2-Dibromoethane	Not Detected	69	Z	50
95-50-1	1,2-Dichlorobenzene	840	69		50
107-06-2	1,2-Dichloroethane	Not Detected	69		50
78-87-5	1,2-Dichloropropane	Not Detected	69		50
108-67-8	1,3,5-Trimethylbenzene	580	69		50
541-73-1	1,3-Dichlorobenzene	Not Detected	69		50
106-46-7	1,4-Dichlorobenzene	170	69		50
78-93-3	2-Butanone (MEK)	Not Detected	340		50
591-78-6	2-Hexanone	Not Detected	340		50
91-57-6	2-Methylnaphthalene	430	340	X	50
67-64-1	2-Propanone (acetone)	Not Detected	1400		50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	340		50
107-13-1	Acrylonitrile	Not Detected	340	Z	50
71-43-2	Benzene	Not Detected	69		50
108-86-1	Bromobenzene	Not Detected	69		50
74-97-5	Bromochloromethane	Not Detected	69		50
75-27-4	Bromodichloromethane	Not Detected	69		50
75-25-2	Bromoform	Not Detected	69		50
74-83-9	Bromomethane	Not Detected	280		50
75-15-0	Carbon disulfide	Not Detected	69		50
56-23-5	Carbon tetrachloride	Not Detected	69		50
108-90-7	Chlorobenzene	Not Detected	69		50
75-00-3	Chloroethane	Not Detected	340		50
67-66-3	Chloroform	Not Detected	69		50
74-87-3	Chloromethane	Not Detected	340		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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Extraction Method: 5035 **Extraction Date:** 11/08/2007 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
156-59-2	cis-1,2-Dichloroethylene	Not Detected	69		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	69		50
110-82-7	Cyclohexane	Not Detected	340		50
124-48-1	Dibromochloromethane	Not Detected	69		50
74-95-3	Dibromomethane	Not Detected	69		50
75-71-8	Dichlorodifluoromethane	Not Detected	340		50
60-29-7	Diethyl ether	Not Detected	280		50
108-20-3	Diisopropyl Ether	Not Detected	340		50
100-41-4	Ethylbenzene	77	69		50
637-92-3	Ethyltertiarybutylether	Not Detected	340		50
67-72-1	Hexachloroethane	Not Detected	340		50
98-82-8	Isopropylbenzene	Not Detected	69		50
108383,106423	m & p - Xylene	140	140		50
74-88-4	Methyl iodide	Not Detected	69		50
75-09-2	Methylene chloride	Not Detected	140		50
1634-04-4	Methyltertiarybutylether	Not Detected	69		50
91-20-3	Naphthalene	Not Detected	340	X	50
104-51-8	n-Butylbenzene	Not Detected	69		50
103-65-1	n-Propylbenzene	110	69		50
95-47-6	o-Xylene	140	69		50
99-87-6	p-Isopropyl toluene	310	69		50
135-98-8	sec-Butylbenzene	320	69		50
100-42-5	Styrene	Not Detected	69		50
98-06-6	tert-Butylbenzene	Not Detected	69		50
75-65-0	tertiary Butyl Alcohol	Not Detected	3400		50
994-05-8	tertiaryAmylmethylether	Not Detected	340		50
127-18-4	Tetrachloroethylene	Not Detected	69		50
109-99-9	Tetrahydrofuran	Not Detected	340		50
108-88-3	Toluene	Not Detected	69		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	69		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	69		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	340	Z	50
79-01-6	Trichloroethylene	570	69		50
75-69-4	Trichlorofluoromethane	1100	69	6	50
75-01-4	Vinyl chloride	Not Detected	69	Z	50

Unidentified peaks present in sample.

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Sample Number: AB07230 SS-01

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 11/27/2007 **Analyst:** MF
Extraction Method: 3545 **Extraction Date:** 11/16/2007 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	78.5			
SURROGATE	#Tetrachloro-m-xylene#	64.7			
12674-11-2	Aroclor 1016	Not Detected	4800		10
11104-28-2	Aroclor 1221	Not Detected	4800		10
11141-16-5	Aroclor 1232	Not Detected	4800		10
53469-21-9	Aroclor 1242	Not Detected	4800		10
12672-29-6	Aroclor 1248	4800	1100		10
11097-69-1	Aroclor 1254	Not Detected	1700		10
11096-82-5	Aroclor 1260	2100	1100		10
37324-23-5	Aroclor 1262	Not Detected	2100		10
11100-14-4	Aroclor 1268	Not Detected	1100		10

RLs raised due to matrix interference.

Polynuclear Aromatic Hydrocarbons (PNA)

Analytical Method: 8270 **Date Tested:** 11/26/2007 **Analyst:** SMH
Extraction Method: 3545 **Extraction Date:** 11/13/2007 **Qualifier:**

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	69.6			
SURROGATE	#Nitrobenzene - D5#	42.8			
SURROGATE	#p-Terphenyl-d14#	119			
91-57-6	2-Methylnaphthalene	Not Detected	1300		5.0
83-32-9	Acenaphthene	Not Detected	530		5.0
208-96-8	Acenaphthylene	Not Detected	530		5.0
120-12-7	Anthracene	Not Detected	530		5.0
56-55-3	Benzo[a]anthracene	Not Detected	530		5.0
50-32-8	Benzo[a]pyrene	Not Detected	1100		5.0
205-99-2	Benzo[b]fluoranthene	Not Detected	1100		5.0
191-24-2	Benzo[g,h,i]perylene	Not Detected	1100		5.0
207-08-9	Benzo[k]fluoranthene	Not Detected	1100		5.0
218-01-9	Chrysene	Not Detected	530		5.0
53-70-3	Dibenz[a,h]anthracene	Not Detected	1100		5.0
206-44-0	Fluoranthene	Not Detected	530		5.0
86-73-7	Fluorene	Not Detected	530		5.0
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected	1100		5.0
91-20-3	Naphthalene	Not Detected	530		5.0
85-01-8	Phenanthrene	900	530		5.0
129-00-0	Pyrene	Not Detected	530		5.0

RLs raised due to matrix interference.
Probable petroleum product(s) present.

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Sample **AB07230** **SS-01**

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	Digest Mercury - Sediment	Completed				11/07/2007	7471	TK2
7439-97-6	Mercury - Sediment	ND	mg/Kg dry	0.05		11/08/2007	7471	TS
7440-38-2	Arsenic - Sediment	0.93	mg/Kg dry	0.5		11/19/2007	6020	KS
7440-39-3	Barium - Sediment	20	mg/Kg dry	1		11/19/2007	6020	KS
7440-43-9	Cadmium - Sediment	0.95	mg/Kg dry	0.2		11/19/2007	6020	KS
7440-47-3	Chromium - Sediment	19	mg/Kg dry	2		11/19/2007	6020	KS
7440-50-8	Copper - Sediment	24	mg/Kg dry	1		11/20/2007	6020	KS
	Digest Metals - Sediment	Completed				11/13/2007	3050	RG
7439-92-1	Lead - Sediment	970	mg/Kg dry	1		11/27/2007	6020	KS
7782-49-2	Selenium - Sediment	0.20	mg/Kg dry	0.2		11/27/2007	6020	KS
	Result is estimated due to inter-replicate sample analysis RSD >10%.							
7440-22-4	Silver - Sediment	ND	mg/Kg dry	0.1		11/19/2007	6020	KS
7440-66-6	Zinc - Sediment	350	mg/Kg dry	1		11/19/2007	6020	KS
	% Total Solids	93.7	%	0.1		11/08/2007		DB
	Drying and Grinding - Sediment	Completed				11/09/2007		DB
	Gel Permeation Cleanup-Pesticide/PCI	Completed				11/20/2007	3640	DT
	Gel Permeation Cleanup-SVOC Analy	Completed				11/14/2007	3640	DT

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Qualifier Code	Qualifier Description
1	Result(s) and RL(s) are estimated due to low surrogate recovery.
2	Result is estimated due to high surrogate recovery.
3	Result(s) and RL(s) are estimated due to low matrix spike recovery.
4	Result is estimated due to high matrix spike recovery.
5	Result and RL are estimated due to low continuing calibration standard criteria failure.
6	Result is estimated due to high continuing calibration standard criteria failure.
7	Result(s) and RL(s) are estimated due to poor precision.
8	Result(s) and RL(s) are estimated due to low recovery of batch QC.
9	Result outside QC acceptance criteria.
A	Value reported is the mean of two or more determinations.
C	Value calculated from other independent parameters.
D	Analyte value quantified from a dilution(s); reporting limit (RL) raised.
E	Result is estimated due to high recovery of batch QC.
F	Amenable cyanide was not analyzed due to low level of total cyanide.
G	Result and RL are estimated due to initial calibration standard criteria failure.
H	Recommended laboratory holding time was exceeded.
I	Dilution required due to matrix interference; reporting limit (RL) raised.
J	Analyte was positively identified. Value is an estimate.
JA	Result is estimated due to multiple Aroclors present.
JC	Result is estimated since confirmation analysis did not meet acceptance criteria
JD	Due to severe degradation, specific Aroclor identification is difficult and quantitation is estimated.
K	RL(s) raised due to matrix interferences.
KR	RL(s) raised due to low sample volume submitted.
KS	RL(s) raised due to low total solids.
KW	RL(s) raised due to light sample weight.
LB	Reported library search compounds are tentative identifications with estimated concentrations.
M	The level of the method preparation blank (MPB) is reported in the qualifier column.
N	Non-homogeneous sample made analysis of sample questionable.
O	Result and RL estimated due to analysis from an open vial.
P	Recommended sample collection/preservation technique not used; reported result(s) is an estimate.
Q	Quantity of sample insufficient to perform analyses requested.
R	Result confirmed by re-extraction and analysis.
S	Supernatant analyzed.
T	Reported value is less than the reporting limit (RL). Result is estimated.
V	Value not available due to dilution.
W	Reported value is less than the method detection limit (MDL).
X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200°C. 2-Methylnaphthalene & naphthalene have boiling points above 200°C and are better suited to analysis by methods 8270 or 625 as semivolatile organics.
PI	Possible interference may have affected the accuracy of the laboratory result
Z	Result reported below the RL to meet the TDL in RRD Op Memo 2 (10/22/04) multiplied by applicable dilution factor.

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